

WHAT IS CLAIMED IS:

(1) A multi-layer circuit board comprising:

a first pre-circuit assembly including a first
conductive member, and an aperture which is formed
5 through said conductive member;

a second pre-circuit assembly which is attached to
said first pre-circuit assembly by use of an adhesive
material which is disposed between said first pre-circuit
assembly and said second pre-circuit assembly, said
10 second pre-circuit assembly including a second conductive
member having a portion extending within said aperture;
and

a conductive material which is disposed within said
aperture, said conductive material being connected to
15 said first conductive member and said portion of said
second conductive member which extends within said
aperture, thereby electrically connecting said first
conductive member and said second conductive member.

(2) The multi-layer circuit board assembly of claim 1
20 wherein said aperture includes a side wall and wherein
said portion of said second conductive member which
extends within said aperture comprises a tab member which
abuttingly engages said side wall.

(3) The multi-layer circuit board assembly of claim 1
25 wherein said portion of said second conductive member

which extends within said aperture comprises a bridge member which traverses said aperture.

(4) The multi-layer circuit board of claim 1 wherein said first pre-circuit assembly further comprises a dielectric layer which is disposed between said first conductive member and said second conductive member.

(5) The multi-layer circuit board of claim 4 wherein said second pre-circuit assembly further comprises a third conductive member and a core member which is disposed between said third conductive member and said second conductive member.

(6) The multi-layer circuit board of claim 5 wherein said second and said third conductive member are made from a copper material and said core member is made from an aluminum material.

(7) The multi-layer circuit board of claim 1 wherein said conductive material comprises solder.

(8) A method for forming a connection within a multi-layer circuit board including a first pre-circuit assembly having a first conductive layer, and a second pre-circuit assembly including a second conductive layer, said method comprising the steps of:

forming an aperture within said first pre-circuit assembly;

aligning said second pre-circuit assembly with said first pre-circuit assembly such that a first portion of said second conductive layer resides above said aperture;

attaching said first pre-circuit assembly to said
5 second pre-circuit assembly; and

inserting conductive material into said aperture effective to connect said first portion of said second conductive layer to said first conductive layer.

(9) The method of claim 8 further comprising the steps
10 of:

selectively removing portions of said second pre-circuit assembly which are disposed above said first portion of said second pre-circuit assembly, thereby exposing said first portion of said second pre-circuit
15 assembly; and

deforming said first portion of said second pre-circuit assembly, effective to cause said first portion of said second pre-circuit assembly to extend within said aperture.

20 (10) The method of claim 9 wherein said first portion of said second pre-circuit assembly is deformed by use of a punching process.

(11) The method of claim 9 wherein said first portion of said second pre-circuit assembly comprises a bridge
25 portion.

(12) The method of claim 9 wherein said first portion of said second pre-circuit assembly comprises a tab portion.

(13) The method of claim 9 wherein said portions of said second pre-circuit assembly are selectively removed by
5 use of an etching process.

(14) A method for forming a connection within a multi-layer circuit board, said multi-layer circuit board including a first pre-circuit assembly including a conductive core member, a dielectric member which is
10 attached to a top surface of said conductive core member, an adhesive layer which is coupled to a top surface of said dielectric member, and a second pre-circuit assembly including a second core member and a first and second conductive member which are respectively attached to a
15 top and bottom surface of said second core member, said method comprising the steps of:

selectively forming at least one hole through said first pre-circuit assembly in a location where a connection to said conductive core member is desired to
20 be formed;

registering said second pre-circuit assembly with respect to said first pre-circuit, effective to cause a portion of said second conductive member to reside above said at least one hole;

25 attaching said second pre-circuit assembly to said adhesive layer; and

selectively inserting a conductive material within said at least one hole, effective to connect said portion of said second conductive member to said conductive core member.

5 (15) The method of claim 14 further comprising the step of:

selectively etching at least a portion of said second core member.

10 (16) The method of claim 14 wherein said conductive material comprises solder.

(17) The method of claim 14 wherein said solder is selectively inserted into said at least one hole by use of a compression printing technique.

15 (18) The method of claim 14 wherein said conductive core member is manufactured from a copper material.

(19) The method of claim 17 wherein said first and said second conductive member each comprises a copper member.

(20) The method of claim 19 wherein said second core member comprises an aluminum member.

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